

spots of red and black upon particular parts, were exceedingly bright and beautiful. When one compared the whole appearance to that of a clean fish, it was wretched and disagreeable; it was lank; the belly empty, flabby, and of a dirty yellow; the jaws at a considerable distance in the middle, the under jaw with a large protuberance standing perpendicular upon the extremity; the upper jaw with a hole almost quite through (and I am told in some quite through), in which, when the jaws were shut, the protuberance lodged. Not one fin entire; the scales and skin being in many places destroyed, presented the appearance of foul ulcers. The gills were full of the *Lernæa salmonæ*; such salmon are called *Kipper*, or foul fish.

The cruves in the river Devron are (following the windings of the river), about a mile and a half from the sea. In the sandy places below the cruves, where there is a sufficient depth of water, a great many salmon spawn. In those places they are seen raising considerable hills of sand, probably to cover and protect the spawn.¹ They are likewise seen frequently pushing and striking one another; and the fishermen assert that they have many battles: their conjecture is that the battles are occasioned by the males endeavouring to get at the spawn in order to devour it, and the females endeavouring to defend it. About these hills they remain during the winter, and until the young fry appear, unless forced off by a torrent, probably in order to keep the hills in repair and to defend the spawn from the many enemies ready to attack it. *Quære*.—Are not the form of the jaws, the foul ulcers in the skin, and the destruction of the fins owing to the above-mentioned operations? *Quære*.—If salmon spawned in the sea, would they not be found more or less in the condition of kipper? But in this condition they are never found out of the rivers.

Linnaeus says of the *LERNÆA Salmonæ*: "*Habitat in branchiis salmonum; ergo etiam marina*:" this latter is certainly a mistake; for these *Lernæa* are never found with us out of the rivers; and several sensible fishermen have assured me, that salt water proves absolute destruction to these animals.

Salmon, at a certain time during their stay in the sea, are infested by another animal of that genus, called by Linnaeus *MONOCULUS*, which is as really a marine, as the other is a fresh-water animal. This species seems to me to be undescribed by authors and very distinct from the *M. piscinus* of Linnaeus, which it in some measure resembles. In a few hours after a salmon has entered the river, not one of these *MONOCULI* are to be found upon it. *Quære*.—Have we not in these *vermes* a provision made by the Author of Nature for forcing the salmon from the sea into our rivers, and from the rivers back again into the sea?

Inherited Memory

YOUR correspondent "A. B." has propounded a theory which would satisfactorily explain a good many facts in natural history which have hitherto been extremely perplexing. I am strongly inclined to believe that in some of our birds, at any rate, the knowledge of localities is inherited. About thirty years ago I lived at a farmhouse, my father's home; the house stood alone in the country; my father also occupied some premises in a village, about half a mile distant. On these premises there was a large, very old dove-cot containing blue rock pigeons.

My brothers and I wished to establish a similar dove-cot at the farm, and prepared a suitable room for the purpose. In the first instance we caught, one winter's night, about fifty of the old rock pigeons; these we confined for five or six weeks, but when liberated they of course flew straight home. We next took a number of fledged young ones out of the nests. These had never been outside the old dove-cot, but when sufficiently strong they all flew away, as the old ones had done.

Discouraged, but still determined to succeed, we next bought a number of tame pigeons, and when they began to sit we put eggs of blue rocks under them, taking their own eggs away. Several were reared; but as soon as they were strong enough to dispense with the care of their foster-mothers, they one after another deserted them and returned to the ancestral dove-cot. A few years after this the premises where the old dove-cot was situated were altered, and the way into the dove-cot quite stopped up. The pigeons were sold and driven away.

For nearly twenty years blue rocks continued to visit the old premises. Some of them built on a ledge in an old gateway, that being the place in which it was possible for them to find nest-room the nearest to the old dove-cot. These occurrences

seem to point to remembrance of localities in the race as well as in individuals, and "inherited memory" would, I think, best account for *all the facts* of the case.

The Gynsills, Leicester

JAMES ELLIS

A Golden Eagle and a Decoy—Audacity of a Hawk

WHILST staying a few days at Manhattan, a little town in Kansas, I spent some hours in the office of a dentist, Dr. C. Blackley, who is also an ornithologist, having stuffed a goodly number of the birds of the state. He was then occupied with a fine specimen of the common pelican (*Pelicanus communis*) one of a flock of over a thousand that passed over the town in the month of April, some of them alighting in the neighbouring marshes. These birds are not unfrequent visitors to these far inland regions, and I have known them shot and brought to me from the alkali lakes in Colorado, both regions from 600 to 800 miles from the sea. The doctor told me an amusing incident of a day's wild goose shooting in the vicinity. He took with him to one of the ponds frequented by wild geese, a stuffed specimen of the Canada goose, to act as a decoy. Having firmly planted his bird in the sand with its wooden platform well covered over, he lay behind the bushes awaiting a shot. Suddenly there was a rush of wings, and like a flash of lightning a golden eagle swept down on the decoy, knocking the bird over, and tearing out some of the stuffing. The eagle then sat down near his prey, staring with amazement at its remarkably quiescent character, as well as at the strange wooden appendage attached to its claws. Deeming there was something uncanny about such a goose, and there might be danger in the neighbourhood, he prudently flew away. Unfortunately a branch of a tree prevented the sportsman from shooting the marauder.

(I can vouch for the truth of this story; the doctor showed the goose and where it had been struck).

A few days after this, when in the village of Morrison, Colorado, I was struck with the audacity of one of our smallest hawks. I was standing on a lumber pile in the middle of the street, when I heard a scuffling of wings, and a squeaking; the latter proceeded from a small prairie squirrel, about the size of a rat, who was making the best of his way to a hole in the lumber, hotly pursued by a tiny hawk, whose body was no larger than that of his prey. The squirrel just escaped into the hole by the tip of his tail, the hawk unable to stop the impetus of its onset, dashing right against the lumber-pile, within six feet of where I was standing. I jumped down in pursuit, but totally regardless of my presence, the plucky little bird made another swoop at his prey, who had again made a sally from another hole. I knocked the hawk down this time with my hat, and the squirrel escaped under the wood pile. This took place in the centre of a little village street, with bystanders within a few yards of the occurrence.

The hawk resembled the female sparrow-hawk (*Falco sparverius*).

A. LAKIS

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INTELLECT IN BRUTES

NOW that the discussion on this subject in NATURE seems to be running dry, perhaps a few concluding remarks by one who has not hitherto taken any part in it may be admitted.

The discussion was started by Mr. Nicols recording a case of the gnawing of water-pipes by rats. This is not at all an unusual thing for rats to do, and I cannot see that the fact of their doing so, in order to obtain the water, would imply so incredible an amount of sagacity as some of the other writers in NATURE appear to suppose. The water can be heard within the pipe, and if the rats are thirsty, it seems a sufficiently simple device to gnaw the pipe. Of course it may be an open question whether they gnaw the pipe for this purpose, or for the mere sake of gnawing, or for any other purpose; but that a rat should have sufficient intelligence to gnaw through a water-pipe, supposing the animal to require water obtained in this way, I think there can be no doubt.

The discussion was enlivened by Mr. Henslow introducing certain general propositions as to the features wherein animal intelligence differs essentially from human, and it

¹ Br. Zool. iii. 4to ed., p. 252.

is upon this topic that I should now like to offer a few remarks.

Although Mr. Henslow has not been very fortunate in the expression of his views, I think he has before his mind the most essential, as well as perhaps the most conspicuous, quality wherein animal intelligence differs from human. He says: "It has always seemed to me that brute reasoning is always *practical* and never *abstract*. They do wonderful things suggested by the objective facts before them, but, I think, never go beyond it. Thus, a dog left in a room alone rang the bell to fetch the servant. Had not the dog been taught to ring the bell (which, on inquiry, proved to have been the case), it would have been abstract reasoning, but it was only practical. The Arctic fox—too wary to be shot like the first who took a bait tied to a string, which was attached to the trigger of a gun—would dive under the snow, and so pull the bait down below the line of fire. This is purely practical reasoning; but had the fox pulled the string first out of the line of fire *in order* to discharge the gun, and then to get the bait, *that* would have been abstract reasoning which he could not attain to."

To this Dr. Rae replies: "To pull the bait downwards *out of the line of fire* was the only safe way for the fox to have acted. . . . Had he used what Mr. Henslow calls 'abstract reasoning'—which, I presume, means pulling the bait, not the line, to *one side* out of the line of fire—the fox would certainly have been shot, as the bait could not have been moved more than four or five inches from the wooden stake through which the bait-line passes.

"If Mr. Henslow really means that the fox should have shown his powers of 'abstract reasoning' by going up to the line of fire between the gun and the bait, and then pulled the string until the gun went off, I think the chances of reynard's ever eating the bait would be very small indeed. I have known him do what showed equal or greater intelligence, namely, cut the bait-string, as already mentioned."

It having been thus clearly shown that the "practical reasoning" of the fox was more to the point than the "abstract reasoning" of his critic, and several others of your correspondents having supplied more or less well-authenticated instances of the display of deliberative reasoning by brutes, Mr. Henslow concluded his part in the correspondence by modifying his original statement thus:—"I will abandon my notion of abstract reasoning, at least as hitherto described, for I now think that what I meant by the want of the faculty would be better described as an impotence, or, at least, a feebleness of mind in concatenating correlative ideas; or, perhaps, a want of receptivity of the suggestiveness of things will express my meaning." Owing, perhaps, to a feebleness of mind in concatenating correlative ideas, or perhaps to a want of receptivity of the suggestiveness of things, for my own part I cannot perceive these words to express any meaning at all—or, at least, any meaning that is not flagrantly absurd. I have never known an animal unable to concatenate the idea of eating with the correlative idea of the thing suited to be eaten, and very few among the higher animals show any want of receptivity of the suggestiveness of such a thing as a whip. The truth is Mr. Henslow has only darkened his meaning by this latest multiplication of words. What he originally intended to say is, not that animals do not possess *any* power of abstract thinking, but that this power is in them feeble as compared with what it is in man. Abstract thinking means thinking in or of abstractions, *i.e.*, of qualities as apart from particular objects. Now it would be absurd to maintain that no animal has any idea of quality except as in association with particular objects of past experience. Give a cat or a dog some kind of meat or cake which the animal has never before met with, and the careful examination which the morsel undergoes before it is consigned to the mouth proves that the animal has properly abstract

ideas of sweet, bitter, hot, nauseous, or, in general, good for eating and bad for eating, *i.e.*, abstract ideas of quality as apart from the object examined—the motive of the examination clearly being to ascertain which general idea of quality is appropriate to the particular object examined. Thus Mr. Henslow cannot mean that animals possess no power at all of abstract thought. What he must mean is that this power is manifested in an extremely undeveloped form, the mind of an animal being only furnished with abstract ideas of the simplest or least elaborated type, and being therefore unable to carry on for any considerable distance the process of forming and joining ideas irrespective of suggestions supplied by immediate sense-perceptions. In other words, as Mr. Henslow himself very clearly states the case in one of his earlier letters, "it is this *mental reflection* which seems to me to be wanting in animals."

Taking, then, this as the only meaning which Mr. Henslow has to convey, it is, I think, the only meaning which with philosophical justice he can have to convey. For the more that we push analysis into the region of brute psychology, the more do we become convinced that the only very considerable difference between it and human psychology consists in the comparatively small development of the power of "mental reflection."

And here I may remark that this is just the difference which the theory of descent would lead us to anticipate as the chief, if not the only, difference; for it is evident that this difference has reference to the highest qualities of mind—*i.e.*, those most removed from simple mechanical responses to stimuli supplied by the senses—and therefore to the qualities which must have been of the most recent development. The tree psychological has been a long time in growing; its roots are constituted by mere excitability, reflex action is its stem, its branches are the association of ideas, the emotions are its leaves, and the faculty of abstract thought is a single blossom borne upon its topmost spray. And if we compare this tree with that of zoology, we find that the single blossom of the one corresponds with the highest product of the other. *Homo sapiens* is the lord of creation, because, having sprung from the primates he started with some little power of abstract thought, which, through the instrumentality of continuously improving language, was forced on by natural selection at a probably astounding pace.

So far, then, as the theory of descent is concerned, there is no serious difficulty presented by this chief point of difference between animal and human intelligence.¹ I think, however, that both in this connection, and also for the sake of comparative psychology, it is desirable to say that although Mr. Henslow has, in my opinion, stated the only great difference that obtains between human and animal psychology, there is no reason to think that this difference is so great or absolute as he appears to suppose.²

¹ I may here remark that a great deal too much stress seems to me to be laid by many writers on the presence of self-consciousness in man as a feature distinguishing his mind from that of animals. For this faculty, it seems to me, is obviously one that *must* arise so soon as the power of forming abstract ideas has advanced sufficiently far to admit of an animal thinking of itself as distinct from its surroundings. And this is surely not any so enormous an advance as to be impossible without supernatural assistance. A semi-human animal might well have had an abstract idea of thou, you, and they, and also an abstract idea of its own body as being more or less similar to that of its fellows. From this to an abstract conception of I, as distinguished from thou and not I, the transition seems sufficiently easy; and when once the idea of self began to dawn, it would be assisted by reflection, rendering past states of consciousness objective to present ones. But the idea of self *plus* the power of introspection is all that can be meant by self-consciousness.

² In saying that Mr. Henslow has stated this difference to be the only one that obtains between human and animal psychology, I do not forget the remarks with which he concludes his correspondence. These remarks may be summed up in his own words—animals "cannot be self-conscious, cannot conceive of God, and can neither be moral nor immoral." As all these distinctions between human intelligence and animal intelligence clearly rest upon, or are included in, the distinction above considered in the text, it is needless to occupy space with considering them in detail. Although I have myself maintained that on the theory of evolution we might antecedently expect the more intelligent and sympathetic of the higher animals to present the germs of a moral sense, and further, that in the case of dogs this expectation seems sometimes to be realised, this, of course, is a widely different

Several of the instances which your other correspondents supplied, would, as Mr. Henslow himself admits, "if correctly stated, and *if the motive* of the animals could in every case be proved, completely overthrow my supposition that animals never copy us with the same or a rational purpose." And even if we allow, for the sake of argument, that none of these instances have been "correctly stated," yet there are such a multitude of other instances on record of substantially the same kind, that it is impossible to doubt that animals present the beginnings of "mental reflection." Not to occupy too much space, I shall confine myself to stating a few instances which have not hitherto been put on record. Mr. Henslow says, "Why is it that no dog ever (to my knowledge, of course) observed a person ring a bell, noticed that the bell brought the servant, and then went through the process of reasoning—'Because such was the result I will ring the bell too?'" This I call abstract reasoning." Well, Mr. Lawson Tait tells me that he has a cat which, without having been taught, does precisely what is here imagined. That is to say, when the cat wants milk and cannot persuade the persons in the sitting-room to supply her wants, she touches the bell, with the evident purpose of attracting attention to her wants in a more emphatic manner. The animal must have observed that ringing the bell has the effect of calling the servant, who sometimes brings milk, and therefore when her solicitations are unheeded or misunderstood, she makes a sign which conveys her meaning more conspicuously and more explicitly than she is able to make with her voice. Although this is no doubt a very remarkable case,¹ it is really only a higher manifestation of the faculties of observation, reflection, and communication

thing from supposing a dog to be either a moral agent or a religious animal. No one with an atom of common sense could entertain such a supposition for a moment; for morality and religion are among the highest products of abstract thought. Some time ago I had to give a lecture on evolution at one of our large provincial towns. Next Sunday the vicar told his congregation that there could be no truth in the modern doctrine, and the reason he gave had the merit of being boldly startling. "No one," he said, "had ever seen an ape pray." The answer to this profound argument is, that if any one ever did witness such a spectacle, the fact would deal the heaviest of possible blows against the theory of descent in the domain of psychology. A religious monkey would be a phenomenon impossible to explain by any scientific theory, so that—mimicry apart—if a naturalist were to see an orang outang kneel down, clasp its hands, and raise its eyes to heaven, he could only conclude that the animal was divinely—or diabolically—inspired.

On reading the proof of this article, it seemed to me desirable to obtain more full information concerning this case, and, accordingly, I wrote to Mr. Tait to furnish it. The following is extracted from his reply:—

"The cat, a female, white, yellow eyes, absolutely deaf to all sounds not conveyed through solid media, was remarkably acute in the matter of sight, and singularly intelligent, being a granddaughter of my begging cat." [This was a cat which *spontaneously* adopted the habit of begging for food, and transmitted the habit to her kittens, and her kittens' kittens. I have seen one of these, now grown into a cat, which begs quite as well as any terrier; and the interesting fact is that all this family of begging kittens take to begging spontaneously, independently alike of teaching and of seeing their mothers beg.] "When in the room with Mrs. Tait and myself, and feeling a desire for milk, she first expressed that desire by peculiar cries, then by sitting in front of us and begging like her grandmother, but not in such an accomplished manner. This failing, she would go to the side of the fireplace, and, standing on a foot-stool, would pat with her hand the knob of the fire-place bell." [Of course, a cat not having a properly prehensile hand, could not actually ring such a bell.] "This was never resisted, and as soon as she saw the bell rung, she went towards the door at which the servant would enter, and then waited in perfect confidence for the milk which she brought. She did not attempt to leave the room with the servant, but waited patiently for her second coming."

"This cat was also remarkable as a fisher. She would wade into a small pond up to the shoulder and catch fish—trench, goldfish, minnows, &c.—always fond of dabbling in water."

I may here observe that cats seem to be more intelligent than dogs, at least in understanding special mechanisms. Thus it is not an unusual thing for cats, while it is an unusual thing for dogs, to ask admittance to a door by standing up on their hind legs and rattling the handle of the door with their fore-legs. Also, among the immense number of letters that I have received on the subject of animal intelligence, there is no one case narrated of a dog, while there are several cases narrated of cats jumping at knockers on street doors in order to obtain admittance to their masters' houses. Similarly, I have only received one instance of a dog, while I have received several instances of cats jumping at dumb-latches for the purpose of opening the doors which the latter fasten. I myself had a cat which was constantly in the habit of entering the stables in this way. She used to spring at the handle below the latch, and, while holding on to the handle with one fore-paw, depress the latch with the other, and kick the door-post with her hind-legs in order to push the door open while she held the latch down. This complicated action can only be explained by supposing that the cat observed how her human friends manipulated a thumb-latch, reasoning that she might do likewise, and experimenting until she succeeded.

by signs, which in lower degrees are met with in many animals. Thus, I myself had a terrier which used to express all his desires—even the sexual—by the same sign, that of "begging;" but he was able to make this general sign of desire express the particular thing desired by the manner in which he performed the sign. Thus, for instance, if he wanted water, he used to go to a wash-hand stand, or other place where he had observed that water was kept, and beg with his face towards the water-jug. I adduce this instance because, while it involves the manifestation of the three faculties above-named, it does so in a comparatively low degree, and therefore serves a stepping-stone to their higher manifestation in such instances as that of Mr. Tait's cat. There is nothing so very extraordinary in a dog observing that water is frequently poured out of a certain jug, and reflecting, "I can make my thirst known to my master by begging towards the jug." Yet this involves the same faculties of mind as does the ringing of a bell for a servant as a sign for desiring milk—the only difference between the two cases consisting in the more direct nature of the association and rational sign, Water, Water-jug, Begging towards water-jug, than of the association and rational sign, Milk, Servant a milk-bearer summoned by bell-pulling, Pulling bell to summon servant. Thus, so long as we have abundant evidence of the presence in animals of the faculties of observation and reflection in a low degree, we need not, as evolutionists, be over-solicitous to meet with the presence of these faculties in a higher degree, although as a matter of comparative psychology it is of interest that the highest degree to which such faculties attain in various species of animals should be ascertained. Among the instances which have been published in NATURE, perhaps the most remarkable is that communicated by Dr. Frost—the case, I mean, of the cat sprinkling crumbs to entice birds. I would suggest that Dr. Frost ought to supply more particulars as to where the cat obtained the crumbs, whether or not she had to carry them, and if so, to what distance, how she scattered them, and generally to furnish all the information that he can. So extraordinary does this case appear, that it ought to be stated with all possible minuteness. I have indeed met with alleged cases of precisely similar ingenuity—one displayed by a fox, another by a bear, and so on; but some well-observed instance is required to render these similar instances in any degree credible. Dr. Klein has told me of a case which resembles that of Dr. Frost's cat up to a certain point. For Dr. Klein satisfied himself that the cat he observed had established a definite association between crumbs already sprinkled on the garden-walk and sparrows coming to eat them; for as soon as the crumbs were sprinkled on the walk the cat used to conceal herself from the walk in a neighbouring shrubbery, there to await in ambush the coming of the birds. The latter, however, after all, showed themselves more wideawake than the cat, for there was a wall running behind the shrubbery, from the top of which the birds could see the cat in her supposed concealment, and there a long line of sparrows used to wait, watching the cat and the crumbs at the same time, but never venturing to fly down to the latter until the former, wearied with waiting, went away. In this case the observation and reasoning of the cat—Crumbs attract birds, therefore I will wait for birds where crumbs are scattered—was as complete as in the case of Dr. Frost's cat; but the reasoning in the latter case seems to have proceeded a stage further—therefore I will scatter crumbs to attract birds. And just because it is so rare a thing to find an animal taking this further step in reasoning—the step, I mean, from passive expectation to active adjustment—I think that Dr. Frost ought to be requested to supply more detailed information.

As further evidence of "mental reflection" by animals, I may give a few additional instances.

At the Zoological Gardens I have seen a small monkey hold out to me a nut to crack which was too hard for him to crack himself, and the conflict of emotions with which he held out, again withdrew, and eventually surrendered his treasure was positively painful to witness. Of course I cracked the nut, and Prof. Huxley tells me that he once performed a similar act of charity under precisely similar circumstances. Now the process of "mental reflection," which led to this surrender by the monkey of his valued property must have been both vivid and complex.

Although I have never myself observed an instance, I can have no doubt from the concurrent and independent testimony which I have received that dogs are sometimes capable of reasoning thus: Is my master out or not? When he goes out he always takes his great-coat with him; therefore I will go and see whether or not his great-coat is hanging in its accustomed place.

Lastly, I have just received a letter from the Vicar of Carn, which relates an instance of mental reflection on the part of a poodle dog that has the merit of admitting neither of mal-observation nor unconscious exaggeration. The vicar's friend—a Canon whose name I have at present no express permission to publish—went to visit a cousin, who owned the poodle dog. I will conclude by telling the rest of the story in my correspondent's own words: "The poodle, whose name is Mori, went into the dining-room with them, and kept quietly under the table till the end of lunch, when he begged for a little food, and he was given a small shred of beef. They returned to the drawing-room, while the servant cleared away, and the beef was taken into the larder. The dog did not think he had had his fair share. . . . Now, he had been taught to stand on his hind legs, put his paw on a lady's waist, and hand her into the dining-room. He adopted the same tactics with my friend the Canon, . . . but the sagacious dog, instead of steering for the dining-room, led him in the direction of the larder, along a passage, down steps, &c., and did not halt until he brought him to the larder, and close to the shelf where the beef had been put." [After giving him a piece of beef, the Canon went upstairs and refused again to be led down as before.] "Finding he could not prevail on the visitor to make a second excursion to the larder, he went out into the hall, took in his teeth Canon's hat from off the hall table, and carried it under the shelf in the larder, where the coveted beef lay out of his reach. There he was found with the hat, waiting for its owner, and expecting another savoury bit when he should come for his hat."

GEORGE J. ROMANES

NOTES ON THE FAUNA OF THE SOLOMON ISLANDS

AT a late (January, 1879) meeting of the Linnean Society of New South Wales Mr. E. P. Ramsay, F.L.S., &c., read a paper on the Zoology of the Solomon Islands, the subject of this paper being a large collection of mammals and birds collected at Gaudalcan, Savo, and Cape Pitt by Mr. James Cockerell, a well known Australian collector. The collection was obtained from Capt. Brodie, of the schooner *Ariel*, who had made arrangements with Mr. Cockerell to collect in the islands. Among the novelties described we find two species of *Monarcha*: (1) *M. barbata*, with elongated black plumes from the throat, belonging to the *M. lorica* and *M. leucotis* section; (2) *M. rufocastanea*, black above, deep chestnut rufous below; (3) a *Sauloprocta*, *S. cockerelli*, black above and as far as the breast, which is striped with white and with the abdomen and under tail-coverts white; two species of *Myiagra*, (4) *M. ferocyanæ*, of a beautiful clear steel-blue black above and on the throat, the remainder of the under surface white; (5) *M. pallida*, ashy blue above, white below, tail chiefly pale rufous; (6) a fly-catcher, allied to *Rhissidura rufifrons*, but distinct in

being smaller and having much more rufous on the head and less on the tail, has been named *R. rufifrons*; (7) a curious little sun-bird, *Cinnyris melanocephalus*, having a black head and the remainder of the body dull olive yellow above, brighter yellow below; (8) a *Pseudorectes*, of a rich cinnamon colour, with whitish throat, and yellow crissum and ochre-yellow under tail-coverts, is called *P. cinnamomeum*; and (9) a *Calornis* of a uniform bright steel-green colour, with a sharply ridged keel-shaped culmen, but otherwise resembling *C. cantor*, is named *Calornis solomonensis*.

In addition to the new species, the collection contained some of great interest to ornithologists, particularly a beautiful series of the rare *Lorius cardinalis*, and *Halcyon leucopygia*, of which the female only was previously described. A var. of *Halcyon chloris* is also described, which differs from Mr. Sharpe's plate (Sharpe, "Monog. Alced.", pl. 87) in having the whole of the under surface rich buff, the under wing-coverts of a deeper tint. There is also a large series of *Megapodius brendleyi* (Gray), adults and young, and quite a number of *Dicaeum erythrorhox*. Among the pigeons *Carpophaga rufigula* (Salvad.) is conspicuous from its peculiarly formed cere, also another large species allied to or identical with *C. van-wickii* (Cass.). A var. of (?) *Ptilopus viridis* is described, also *P. superba* from the same place.

The following is a complete list of the species recorded and their habitats:—

	Locality.
1. <i>Astur soloensis</i>	Cape Pitt.
2. <i>Baza stenozoa</i>	Gaudalcan.
3. <i>Ninox</i> "	"
4. <i>Cacatua ducorpsii</i>	Savo.
5. <i>Lorius cardinalis</i>	Savo and do.
6. " <i>chlorocercus</i>	"
7. <i>Geoffroyius heteroclitus</i>	"
8. <i>Eclectus polychlorus</i>	"
9. <i>Centropus milo</i>	Gaudalcan.
10. <i>Cuculus taitensis</i>	Savo.
11. <i>Chalcites plagosus</i> (?)	"
12. <i>Eurystomus crassirostris</i>	Cape Pitt.
13. <i>Eulabes krefftii</i>	"
14. <i>Calornis metallica</i> (?)	Savo.
15. " <i>solomonensis</i> , sp. nov.	"
16. <i>Sturnoides fulvipes</i>	Gaudalcan.
17. <i>Graucalus hypoleucus</i>	"
18. " " sp. nov.	"
19. <i>Edolisoma</i> (?) <i>plumbeum</i>	"
20. <i>Tachycephala orioloides</i>	"
21. <i>Pseudorectes cinnamomeum</i> , sp. nov.	"
22. <i>Monarcha barbata</i> , sp. nov.	"
23. " <i>rufocastanea</i> , sp. nov.	"
24. <i>Sauloprocta tricolor</i>	"
25. " <i>cockerelli</i> , sp. nov.	"
26. <i>Rhissidura rufifrons</i> , sp. nov.	"
27. <i>Myiagra ferocyanæ</i> , sp. nov.	"
28. " <i>pallida</i> , sp. nov.	"
29. <i>Cinnyris melanocephalus</i> , sp. nov.	"
30. " <i>frenata</i>	"
31. <i>Dicaeum erythrorhox</i>	"
32. <i>Halcyon leucopygia</i> , Ven.	"
33. " <i>chloris</i> , var.	Cape Pitt.
34. " <i>sanctus</i>	Savo, &c.
35. <i>Carpophaga rufigula</i> , Salvad.	"
36. " <i>van-wickii</i> , Cass.	Gaudalcan.
37. <i>Ptilopus viridis</i> , var.	"
38. " <i>superbus</i> , Temm.	"
39. <i>Chalcophaps chrysocolora</i> , var.	"
40. <i>Macropygia</i>	Savo.
41. <i>Megapodius brendleyi</i>	"
42. <i>Butoroides javanica</i>	"
43. <i>Herodias garzetta</i>	"
44. <i>Sula personata</i>	"
45. <i>Sterna bergerii</i>	"
46. " <i>gracilis</i> , Gould	"

In addition to the birds Mr. Cockerell obtained in quantity two species of Pteropus, two varieties or perhaps species of *Cuscus*, a species of *Harpyia*, a new *Chiero-*